

**PATENT** 

DOCKET NO. 5231.16-4004C

I certify that this correspondence, along with any documents

referred to therein, is being deposited with the United States Postal Service on July 8, 2002 as First Class Mail in an envelope with sufficient postage addressed to The

Commissioner for Patents, Washington D.C. 20231.

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Title:

SIDE TABLES ANNOTATING AN INSTRUCTION STREAM

Applicant:

John S. Yates, Jr., et al.

Serial No.:

09/429,094

Filed:

October 28, 1999-

Art Unit:

2155

Examiner:

David Eng

RECEIVED

JUL 1 9 2002

COMMISSIONER FOR PATENTS

Washington D.C. 20231

**Technology** Center 2100

## **RESPONSE TO OFFICE ACTION OF MARCH 7, 2002**

I.	Real party in interest				
II.	Related Appeals and Interferences				
	The status of the claims				
IV.	Status of amendments	6			
V.	Telephone interviews of March 7, 2002 and June 26, 2002				
	A. Brief interview of March 7, 2002				
	B. Understanding of the claims	7			
	C. Statements of utility and enablement	7			
	D. Suggested amendments to the claims	8			
	E. Consideration of the Geppert reference				
	F. "Misleading arguments"	9			
VI.	Summary of the invention	10			
VII	I. Issues presented for reconsideration	14			
VII	II. Grouping of claims	14			
	. Argument	1			
	A. Preliminary Observation				
	B. Obviousness	· ·			

Response to Office Action of March 7, 2002 9210792.3

5231.16-4004C 09/

1.	Gr	oup I: claims 2 and 50	. 15
	a.	First ground of traverse: Richter '684 does not teach a table with entries "indexed by an address within an address space"	. 15
	<b>b.</b>	Second ground of traverse: the written Office Action is inadequate to raise a prima facie rejection	
	c.	All claims of Group I stand with claim 2	. 17
2.	Gre	oup II: claims 1, 7, 12, 14-18, 24-30, 42, 64 and 70	. 18
	a.	First ground of traverse: Richter '684 does not teach "a likelihood of the existence of an alternate coding of instructions"	
	b.	Second ground of traverse: the written Office Action is inadequate to raise a prima facie rejection	
3.	Gre	oup III: Claims 1, 19 and 30	. 20
	a.	First ground of traverse: Richter '684 does not disclose "triggering an interrous" wherein the architectural definition of the instruction in the instruction's native architecture does not call for an interrupt"	-
	b.	Second ground of traverse: the Office Action fails to consider each limitation of the claims, in violation of MPEP § 2143.03	
4.	Gro	oup IV: Claims 1, 10-13, 26, and 39-49	. 22
	a.	First ground of traverse: Richter '684 does not teach altering any instruction behavior "in a manner incompatible with the architectural definition of the instruction"	
	b.	Second ground of traverse: the Office Action fails to consider each limitation of the claims, as required by MPEP § 2143.03	n
5.	Gro	oup V: Claims 59-78	. 23
6.	Rei	maining claims	. 24
Ind	efini	teness	24
1.		sst of the "indefiniteness" concerns have been raised and resolved earlier in secution	. 25
2.	Err	oneous tests for "definiteness"	. 25
	a.	"Definitions in the specification"	. 25
	b.	"Support for" or "meaningful operation"	. 26
3.		ach entry describing a likelihood of the existence of an alternate coding of tructions"	. 26
4.	"Aı	rchitectural definition of an instruction"	. 26
5.	"an	architecturally-visible data manipulation behavior"	28

C.

	a.	This issue has been raised and resolved earlier in prosecution	28
6.	"co	ntrol transfer behavior"	29
	a.	This issue has been raised and resolved earlier in prosecution	30
	b.	§ 112 ¶ 2 rejection of a well-established term of art is unwarranted	30
7.		herein the architectural definition of the instruction in an emulated architecture so not call for an interrupt'	
	a. •	An incorrect legal test is applied	30
	b.	This issue has been raised and resolved earlier in prosecution	31
8.	a m	tering a manipulation of data or transfer of control behavior of the instruction transfer incompatible with the architectural definition in an emulated architectural definition.	re
	a.	No rejection is raised - the "rejected" language does not appear in claim 39.	32
	b.	This issue has been raised and resolved earlier in prosecution	32
9.		e architectural definition of the instruction with which the alteration is ompatible is a definition in an emulated architecture"	33
10.	"lo	gically equivalent"	33
	a.	This issue has been raised and resolved earlier in prosecution	34
11.	"W	hat actually the instruction pipeline circuitry does"	34
	a.	This issue has been raised and resolved earlier in prosecution	34
	b.	The claim itself recites "what actually the instruction pipeline circuitry does"	
	-	· · · · · · · · · · · · · · · · · · ·	
	c.	An incorrect legal test has been applied	
12.	"Fu	nction of the lookup structure"	35
13.		aningful operation can be achieved"	36
	a.	Claim 14 itself recites a "functional relationship between the circuits and the lookup structure"	
	b.	No rejection can be raised on the stated grounds	36
14.	"Fi	rst table and second table" of claim 57	37
15.		ach entry describing a likelihood of the existence of an alternate coding of tructions"	37
	a.	This issue has been raised and resolved earlier in prosecution	37
	b.	The Office Action fails to raise a legally-cognizable indefiniteness rejection	38
	c.	The factual premises of any "rejection" are incorrect	39

D.	D. Issues nominally arising under § 112 ¶ 1			
	1.	The Office Action is insufficient to raise any enablement rejection of any claim 4		
		Almost all issues raised in the "enablement" section of the Office Action have been raised and previously resolved to the Examiner's satisfaction – re-raising these issues now is not timely		
		The nominal § 112 ¶ 1 "rejections" apply the wrong legal test		
		. Statements in the specification must be accepted at face value		
		Rejection of language that does not appear in the claims		
	2.	a table lookup circuitry having entries describing a likelihood of the existence of n alternate coding of instructions"		
		. This "rejected" language does not appear in the claims; no "undue experimentation" has been shown		
		. This issue has been raised and resolved earlier in prosecution 4		
		. The Office Action is inadequate to raise a rejection		
	3.	interrupt circuitry which triggers an interrupt in accordance with interrupt criteria on execution of an instruction, wherein the architectural definition of the instruction does not call for an interrupt, the interrupt criteria being based at least i part on the likelihood of the existence of an alternate coding of instructions probability)"		
		This "rejected" language does not appear in the claims; no "undue experimentation" has been shown		
		. This issue has been raised and resolved earlier in prosecution4		
	4.	a handler being responsive to the likelihood of the existence of an alternate coding instructions to affect the instruction pipeline circuitry to effect control of an rehitecturally-visible data manipulation behavior or control transfer behavior of the instruction"		
		. This "rejected" language does not appear in the claims; no "undue experimentation" has been shown		
		This issue has been raised and resolved earlier in prosecution4		
	5.	an instruction pipeline circuitry being affected by the handler being responsive to the likelihood of the existence of an alternate coding of instructions to effect control of an architecturally-visible data manipulation behavior or control transfer behavior of the instruction"		
		. This "rejected" language does not appear in the claims; no "undue experimentation" has been shown		
		o. This issue has been raised and resolved earlier in prosecution4		

	0.	of an alternate coding of instructions to alter a manipulation behavior or control transfer behavior of the instruction in a manner incompatible with the architectural definition of the instruction"	
		a. This "rejected" language does not appear in the claims; no "undue experimentation" has been shown	.9
		b. This issue has been raised and resolved earlier in prosecution 4	9
	7.	"control of architecturally-visible data manipulation behavior includes changing are instruction set architecture under which instructions are interpreted"	
·	8.	"an interrupt circuitry to trigger an interrupt in accordance with synchronous interrupt criteria being based on a memory state and wherein the architectural definition of the instruction in an emulated architecture does not call for an interrupt"	0
	9	"Synchronous interrupt criteria"5	
	10.	"Memory state"	2
	11.	what the wherein clause ["wherein the architectural definition of the instruction in an emulated architecture does not call for an interrupt"] means	3
Exhibit	1	Clean version of the entire set of pending claims (37 C.F.R. 1.121(c)(3))	
Exhibit 2		Rewritten claims marked up to show changes (37 C.F.R. 1.121(c)((1)(ii))	
Exhibit 3		Excerpts from Andrew S. Tanenbaum, Structured Computer Organization, 2d ed., Prentice-Hall (1984)	
Exhibit 4		Excerpts from John Hennessy and David Patterson, Computer Architecture: A Quantitative Approach, William Kaufman Pub., San Mateo CA (1990)	
Exhibit 5		Excerpts from Intel Corp., Intel Architecture Software Developer's Manual, vol. 1 (1997)	
Exhibit 6		Excerpts from Intel Corp., Intel Architecture Software Developer's Manual, vol. (1997)	2
Exhibit	7	Excerpts from Intel Corp., Intel Architecture Software Developer's Manual, vol. 3 (1997)	
Exhibit 8		Instruction Set Architecture Testing, from www.informatik.uni-bremen.de/~davinci/applications/dgm_paper.ps; Guest Viewpoint: Is Out-of-Order Out of Date? Microprocessor Report (Feb 7, 2000) from www.hp.com/products1/itanium/infolibrary/reports/hp_ia64.pdf; and Patterson & Yelick, Bridging the Processor-Memory Gap, www.ucop.edu/research/micro/99_00/99_094.pdf	

